自动化·自慧讲堂（2024 年第 13 期）

—特邀英国伯明翰大学端金鸣副教授来校做学术报告

报告题目：Combing Data- and Model-driven Methods for Effective Medical Image Registration

报告时间：2024 年 7 月 26 日（周五）下午 3:00

报告地点：临江楼A101-102会议室

报告人：端金鸣 副教授

主持人：夏　　教　授

Abstract: In this talk, I will first provide an example of how medical image registration is beneficial for the automatic twinning of the heart's anatomy. This process involves reconstructing 4D smooth anatomical geometries from a few sparse images. After twinning, I will discuss how this technique aids in the classification and prediction of heart conditions, particularly those that pose significant health risks, such as pulmonary hypertension. By improving the accuracy of these predictions, medical professionals can make better-informed decisions and potentially save lives. Following this introduction, I will detail the integration of prior knowledge in neural network architectures for medical image registration. More specifically, I will cover how incorporating existing medical data and knowledge into neural network algorithms can enhance their performance and interpretability. I will also focus on methods for registering high-dimensional medical images efficiently.

The discussion will highlight techniques that ensure the process is fast, precise, and data-efficient, addressing the challenges of handling large and complex medical datasets. Our approaches not only improve the accuracy of image registration but also reduce computational costs, making it more practical for real-world medical applications.

欢迎广大师生踊跃参加!

自动化学院

江苏省大数据分析与智能系统省高校重点实验室

江苏省气象能源利用与控制工程技术研究中心

江苏省大气环境与装备技术协同创新中心

江苏省智能气象探测机器人工程研究中心

2024 年 7 月 25 日